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INTERIM REPORT

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INTERIM REPORT

Background

During Operation DESERT SHIELD/STORM, the Army established an Office of Combat Identification Technologies (OCIT) under U.S. Army Laboratory Command (LABCOM) to determine what anti-fratricide technologies were immediately available for deployment to the Operation DESERT SHIELD/STORM (ODS) theater of operations to aid in combat identification. Working in concert with the Air Force and Marine Corps, the OCIT was able to identify, test, and deploy several devices to the ODS theater, including BUDD lights, DARPA lights, and thermal tape.

On 21 March 1991, an Army Acquisition Executive (AAE) memorandum tasked the U.S. Army Materiel Command (AMC) to develop a proposal addressing the following issues: focus of future efforts; projects planned; level of FY92-97 funding planned; and how fratricide/identification of friend-from-foe research and development will be organized and managed on a permanent basis.

The Army Combat Identification Systems Office (CISPO) was subsequently established under LABCOP and located at Fort Meade, MD, for management of combat identification efforts.

On 21 May 1991, the Army Vice Chief of Staff tasked the Commanding General, U.S. Army Training and Doctrine Command (CG, TRADOC), to establish a task force with CG, AMC, to lay out a comprehensive Army program to address positive combat identification. He stated the Army "cannot accept casualties that can be prevented by our own actions to improve combat identification."

TRADOC would take the lead in the effort. Guidance included the following: address near- and long-term requirements and solutions and detail necessary interfaces with other services and allies; use an integrated approach to address doctrine, training, leader development, organization, materiel (DTLOM), and advanced technology contributions. Ongoing AMC and TRADOC combat identification efforts were to provide starting points.

Establishment of the Combat Identification Task Force

On 30 May 1991, CG, TRADOC, and CG, AMC, reported that a Combat Identification Task Force was being established to provide "extraordinary management" of the combat identification initiative. As part of this concept of extraordinary management, a joint TRADOC - AMC General Officer Steering Committee (GOSC) would direct the effort. Additionally, the task force would include representatives from the Headquarters, Department of the Army, Deputy Chief of Staff for Operations and Plans (HQDA DCSOPS); the Office of the Assistant Secretary of the Army (Research Development and Acquisition) (HQDA SARDA); the U.S. Air Force Tactical Air Command; and the U.S. Marine Corps Combat Developments Command.

Key provisions of the TRADOC-AMC plan were: near-term action would concentrate on joint and combined operations at the tactical level for surface-to-surface and air-to-surface operations; positive identification would be addressed as it related to friendly and enemy forces; and long-term action would expand to the operational level and include air-to-air and surface-to-air joint and combined operations.

An accelerated Concept Based Requirements System (CBRS) process would be used to provide an established process and a framework for identifying battlefield needs in functional areas of DTLOM related to combat identification. The task force would develop a prioritized list of deficiencies and propose near-term solutions. The proposed DTLOM solutions would be identified and prioritized. Programmatica for prioritized materiel solutions and a complete action plan with proposed DTLOM solutions would be provided.

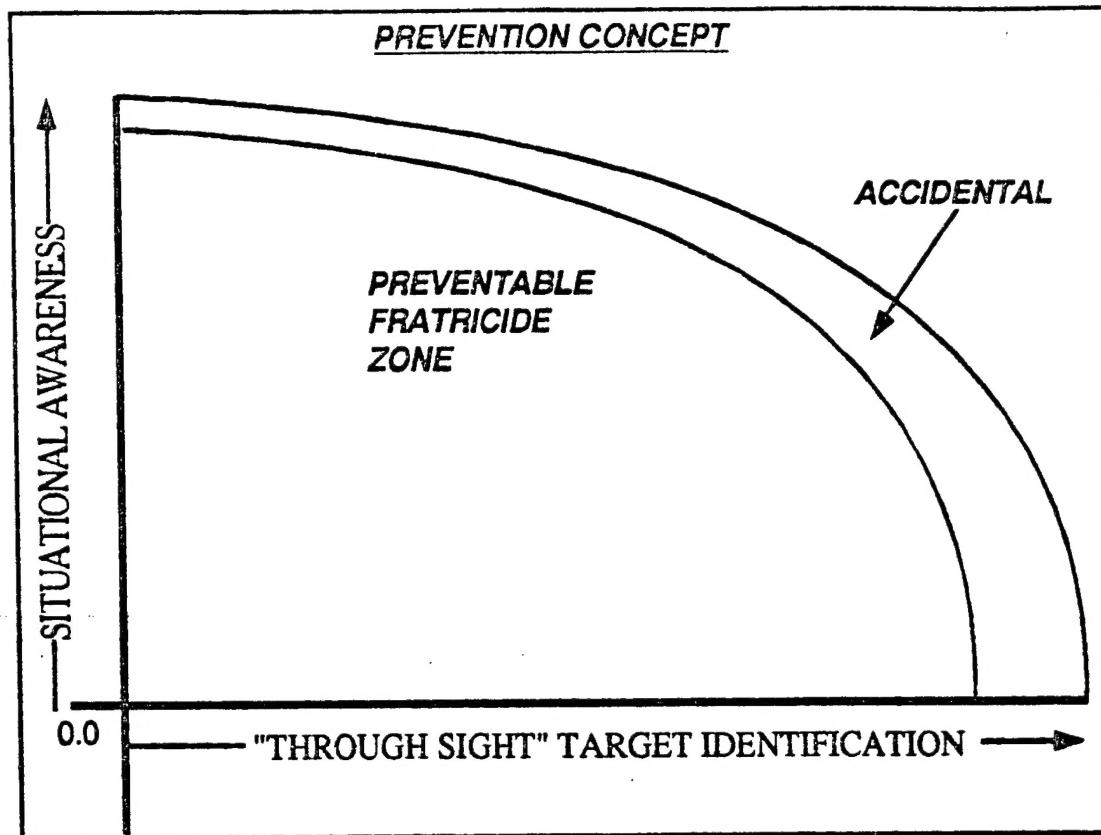
Task Force Work and Findings

Working groups were formed to review the concept, identify needs, propose solutions, and develop programmatica from July through September 1991. Further assistance was arranged by enlisting support of combat and materiel developers for working groups. Combat developers participated in sessions to identify needs and DTLOM solutions. Materiel developers joined and participated in sessions to develop programmatica for the proposed materiel solutions. The work groups identified Battlefield Development Plan (BDP) needs. These were recommended by the GOSC on 31 July 1991 and reported to HQDA in late August 1991.

The Task Force determined in the concept development phase that the term "combat identification" would encompass all anti-fratricide measures and could be addressed in the two areas of "situational awareness" and a "positive identification" capability. The following statements were developed for incorporation into the concept:

Situational Awareness. Situational awareness reduces the potential for fratricide by providing for real-time, accurate knowledge of one's own location, as well as the locations of friendly, enemy, neutrals, and noncombatants. Situational awareness also requires the leadership to be cognizant of the factors of Mission, Enemy, Terrain and Weather, Troops, and Time (METT-T). These factors take into account the commander's intent and leadership concerns such as discipline and morale factors.

Positive, Immediate Target Identification. Positive identification helps reduce the probability of fratricide by accurate, dependable, through-sight discrimination between friend and foe. A positive identification capability out to the maximum range of weapon and target acquisition systems is necessary. The positive identification technique or capability should result in no increase in friendly vulnerability or degradation of systems' performance. The identification capability is needed for surface-to-surface, air-to-surface, surface-to-air, and air-to-air situations.



Lack of positive target identification capability and the inability to maintain situational awareness in combat environments are the major contributors to fratricide. If we know where we are and where our friends are in relation to us, we can reduce the probability of fratricide. If, in addition, we can distinguish between friend, neutral, and enemy, we can reduce that probability even more.

Using this concept, the Task Force proposed DTLOM solutions in August, and the GOSC recommended the proposed solutions on 29 August 1991. Materiel solution programmatic were developed during September. These programmatic were recommended by the GOSC on 27 September 1991.

Some of the recommended solutions have not yet had the benefit of critical study and analysis. The materiel solutions are especially challenging. The problem of beyond visual range identification of friend from foe has defied effective solution in the air-to-air arena for decades. It seems reasonable to expect similar difficulties will be encountered in the surface-to-surface arena. It also seems likely that solutions suitable for one circumstance may not be suitable for another, requiring a combination of capabilities which can be tailored to the conflict environment. Therefore, these proposed solutions should be considered "emerging results" until necessary analysis is identified and completed.

Nevertheless, we are pressing ahead with a number of initiatives in our doctrine, training, leader development and organizations.

In the area of doctrine, significant recognition of the risks of fratricide and measures to prevent it are already present in our most important writings. These include doctrinal manuals at all levels. For example, Corps Operations, FM 100-15, Division Operations, FM 71-100, and The Tank and Mechanized Infantry Battalion Task Force, FM 71-2, all contain fratricide prevention guidance. However, tactics, techniques, and procedures - the application of doctrine to specific circumstances - are being examined in current exercises and may require expansion to fully address fratricide prevention. We are also capturing in our doctrine the very useful coalition liaison teams we used in DESERT STORM. Doctrine focusing on fratricide prevention in airspace management and control measures for direct and indirect fire in the offense is also being reviewed.

Actions to enhance fratricide prevention are also underway in our training programs. Training actions include employment of remote-controlled friendly targets on tank and infantry live-fire ranges, fratricide data collection at the combat training centers, and greater emphasis on fratricide during after-action reviews. For the future, work has begun on a standard combat vehicle marking system, development of a fratricide prevention training video tape, inclusion of friendly and neutral targets in target arrays, and improved graphic resolution for simulators.

Other fixes to training, in leader development, are also underway. Fratricide prevention measures are currently part of battalion and brigade pre-command course programs. Other leader development courses are being reviewed and fratricide prevention included as appropriate. The Center for Army Lessons Learned is to publish a quarterly fratricide prevention and risk assessment bulletin, beginning in March 1992. A fratricide risk assessment card for leaders and planners is being developed. These will both be used in leader development courses as well as throughout the Army.

As already mentioned, organizational changes to minimize fratricide were begun during Operation DESERT STORM by employment of mobile liaison teams to improve communications and coordination among units. In the future, we will institutionalize liaison structures and thicken the battlefield reconnaissance capability.

We have taken actions to develop a materiel safety net to minimize fratricide. We are examining Quick Fix items, available now; Quick Fix Plus and near-term items, available within 18 months; and investigating mid- and long- term approaches. Quick Fix items (BUDD lights, DARPA lights, thermal tape, and global positioning system) and one Quick Fix Plus item (a thermal beacon) are being evaluated at TRADOC schools and the National Training Center to determine their contribution to improved combat identification. Results are expected by March. In Spring 1992, additional Quick Fix Plus items (laser warning devices and position location devices) will be tested, along with prototypes of five near-term identification devices. Near-term devices will apply laser detection and warning technologies and employ various approaches to alert firing platforms that targets are friendly.

The Task Force also noted that several other systems are being procured for the Army which have important contributions to fratricide prevention. Developmental systems which are key to fratricide prevention improve situational awareness and target identification. Systems of primary importance include unmanned aerial vehicles, target acquisition radars, enhanced position location reporting systems, improvements to position location and position data sharing for the M1 tank, and helicopter sight improvements.

To institutionalize continued emphasis on combat identification, AMC has established the Combat Identification Systems Project Office. This office will oversee development, testing, and fielding of proposed materiel solutions. TRADOC is also implementing measures to provide management for combat identification by formalizing its fratricide prevention action plan. Progress will be monitored through monthly reports to the CG, TRADOC. Semiannually, a TRADOC and AMC general officer steering committee will meet to provide recommendations and guidance for future actions.

Much remains to be done. In-depth evaluations of solutions are needed to determine if they are valid and make a significant contribution to combat identification. Quick Fix materiel solutions need further evaluation to determine proper tactics, techniques, and procedures. The Army will implement these solutions only if they complement combat effectiveness.

The technology is not available today to resolve the fratricide issue with absolute certainty. Moreover, this advanced technology is expensive and will meet strong competition from other critical systems and requirements. However, the Army will continue to keep combat identification in the forefront when developing requirements for combat systems and will incorporate combat identification capabilities into future designs.

Fratricide is not acceptable. All reasonable measures must be taken to minimize the occurrence. But, we must understand that the "fog of war," human error, and materiel failure inevitably will make some incidents of fratricide possible. Combat leaders must balance battlefield risk against mission accomplishment - - quick decisive victory with minimum casualties.

The Army will continue its progress in combat identification through the implementation of the Combat Identification Action Plan, a concerted, coordinated, and continuing effort in the areas of DTLOM by the Army and its sister services.